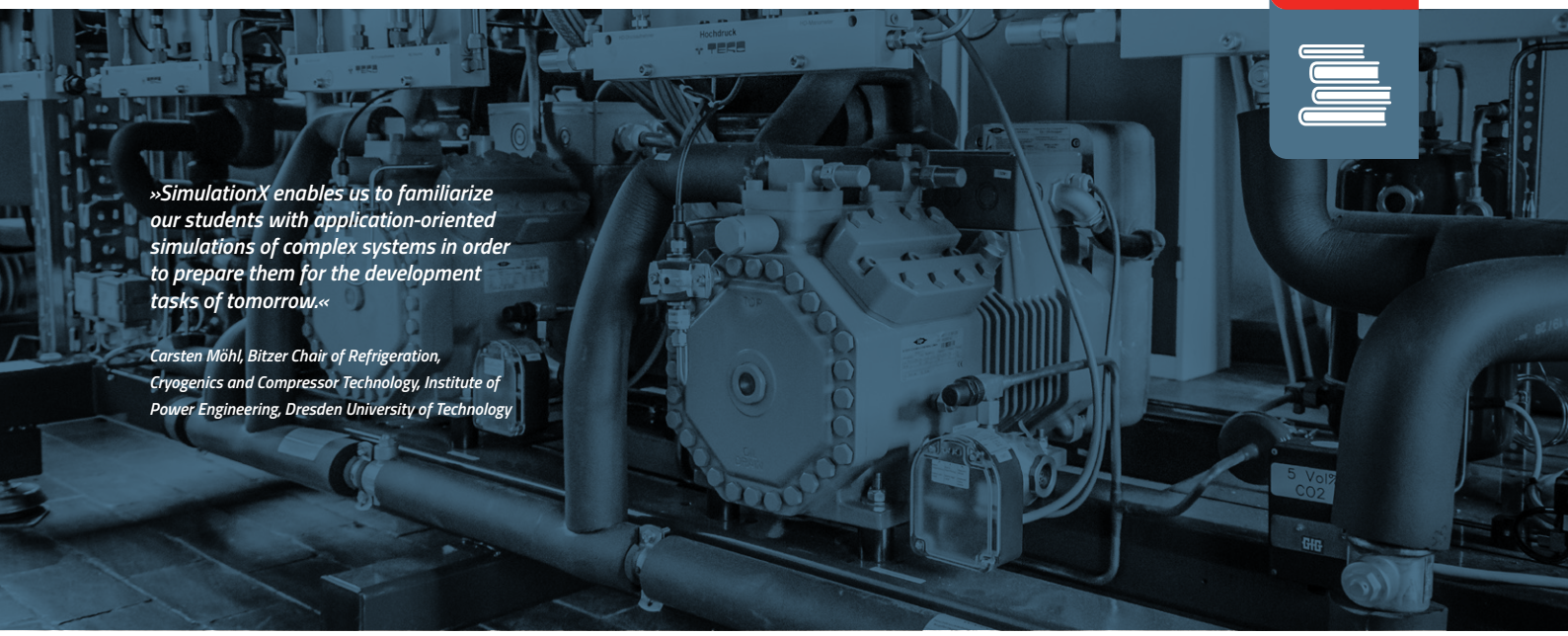
TECHNISCHE UNIVERSITÄT DRESDEN

The Institute of Power Engineering at the Dresden University of Technology analyzes complex thermodynamic interactions in cooling devices with SimulationX

The Dresden University of Technology is one of Germany's eleven elite Universities of Excellence. As a full-fledged university with a broad range of disciplines, it belongs to the strongest research institutions in the country. Exchange and collaboration between sciences, various industries and society are the corner stones for its success. The Bitzer Chair combines the disciplines of refrigeration, cryogenics and compressor technology. It covers all kinds of cooling and cryogenic processes as well as the design of compressors.



»SimulationX enables us to familiarize our students with application-oriented simulations of complex systems in order to prepare them for the development tasks of tomorrow.«

Carsten Möhl, Bitzer Chair of Refrigeration, Cryogenics and Compressor Technology, Institute of Power Engineering, Dresden University of Technology

Challenge

Supporting research and education

During the courses at the Bitzer Chair of Refrigeration, students acquire the knowledge about the correlations relevant to planning and safely operating refrigeration plants. This requires a comprehensive understanding of various transient interactions.

Solution

Multiphysics system simulation

SimulationX allows for comprehensive representations of refrigeration systems. From the compressor's mechanics to temperature equalization processes in heat exchangers, it is possible to analyze transient behavior and influences of systemic disturbances.

Benefits

Knowledge builds bridges

Numerical simulation provides a viable solution to gain deeper insight into processes in refrigeration plants. It also promotes a deeper understanding of the theoretical principles. The results are then verified against data from test rigs, which helps the students to better understand the multitude of influencing factors involved.

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